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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,691	11/25/2003	Per Skillermark	4147-52	3042

23117 7590 07/18/2007
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EXAMINER	
DOAN, KIET M	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
07/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,691	SKILLERMARK ET AL.	
	Examiner	Art Unit	
	Kiet Doan	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6 and 8-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-6, 8-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11/25/07* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is response to Remarks file on 04/13/2007.

Claims 2, 7, 12 are cancelled.

Claims 1, 3-6, 8-11 are amend.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims rejected under 35 U.S.C. 103(a) as being unpatentable over.

3. Claims 1-, 6-7, 11, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata (Pub. No. 20042/0090948 A1) in view of Demers (Pub. No. 2003/0003906 A1)

Consider **claims 1, 6, 11**. Nagata teaches an interference cancellation method for a mobile station in a radio cell of a CDMA cellular system, comprising:

maintaining a list of intracell interferers in the CDMA cellular system to the mobile station (Abstract, Paragraph [0007], [0012], [0040-0042]). Nagata teaches the limitation of claims as discuss **but silent on**

detecting intercell interferers to the mobile station base on handover-related information determined by the mobile station;

adding one or more detected intercell interferers said list; and

performing, based on information associated with the interferers in said list, interference cancellation for all interferers in said list.

In an analogous art, Demers teaches " Method and systems for reducing interference across coverage". Further, **Demers teaches**

detecting intercell interferers to the mobile station base on handover-related information determined by the mobile station;

adding one or more detected intercell interferers said list; and

performing, based on information associated with the interferers in said list, interference cancellation for all interferers in said list (Abstract, Paragraphs [0013-0014], [0058-0060]).

Therefore, it would have been obvious at the time that the invention was made that person having ordinary skill in the art to modify Nagata and Demers system, such that maintaining a list of intracell interferers and detecting intercell interferers performing, based on information associated with the interferers in said list, interference cancellation for all interferers in said list to provide means for distinguish and eliminated the interference signal to make better connection.

Consider **claims 3, 8, 13**. Demers teaches the method of claim 1, including the steps of measuring received interfering signal power from intercell interferers using the same frequency band as the mobile station; adding to said list only intercell interferers having a measured received interfering signal power that exceeds a predetermined power level (Paragraphs [0050-0055]).

3. **Claims 4, 9, 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata (Pub. No. 20042/0090948 A1) in view of Demers (Pub. No. 2003/0003906 A1) and further view of Wong et al. (Pub. No. 2003/0002490).

Consider **claims 4, 9, 14**. Nagata and Demers teaches the limitations of claims as discuss **but silent on** the method of claim 1, including the steps of determining the cross-correlation between a desired signal and signals from intercell interferers; adding to said list only intercell interferers having a determined cross-correlation that exceeds a predetermined cross-correlation level.

In an analogous art, Wong teaches "Directed maximum ratio combining methods and system for high data rate traffic". Futher, **Wong teaches the** method of claim 1, including the steps of determining the cross-correlation between a desired signal and signals from intercell interferers; adding to said list only intercell interferers having a determined cross-correlation that exceeds a predetermined cross-correlation level (Abstract, Paragraphs [0016-0020]).

Therefore, it would have been obvious at the time that the invention was made that person having ordinary skill in the art to modify \Nagata, Demers and Wong system, such that determining the cross-correlation between a desired signal and signals from intercell interferers; adding to said list only intercell interferers having a determined cross-correlation that exceeds a predetermined cross-correlation level to provide means for increase the data transmission in wireless communication without interference.

5. **Claims 5, 10, 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata (Pub. No. 20042/0090948 A1) in view of Demers (Pub. No. 2003/0003906 A1) and further view of Frank et al. (Pub. No. 2003/0035469).

Consider **claims 5, 10, 15**. Nagata and Demers teaches the limitations of claims as discuss **but silent on** the method of claim 1, including the following steps for each intercell interferer to be included in said list: determining a channel estimate; determining a channelization code; determining a scrambling code; forwarding the determined channel estimate, channelization code and scrambling code to a joint detection algorithm used by all interferers in said list.

In an analogous art, Frank teaches "Linear minimum mean square error equalization with interference cancellation for mobile communication forward links utilizing orthogonal codes covered by long pseudorandom spreading codes". Further, **Frank teaches** the method of claim 1, including the following steps for each intercell interferer to be included in said list: determining a channel estimate; determining a channelization code; determining a scrambling code; forwarding the determined channel estimate, channelization code and scrambling code to a joint detection algorithm used by all interferers in said list (Abstract, Paragraphs [0008-0009], [0017-0020], [0029-0032]).

Therefore, it would have been obvious at the time that the invention was made that person having ordinary skill in the art to modify Nagata, Demers and Frank system, such that determining a channel estimate; determining a channelization code;

determining a scrambling code; forwarding the determined channel estimate, channelization code and scrambling code to a joint detection algorithm used by all interferers in said list to provide means for increase the capacity of transmission data and cost effective implement.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hanada et al. (US 2002/0048315 A1).

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiet Doan whose telephone number is 571-272-7863. The examiner can normally be reached on 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kiet Doan
Patent Examiner

JOSEPH FEILD
SUPERVISORY PATENT EXAMINER